

JOURNAL OF SOUND AND VIBRATION

EDITOR

P. E. Doak

EDITORIAL BOARD

W. A. Allen

H. O. Berkay

R. E. D. Bishop

B. L. Clarkson

R. Cohen

D. G. Crighton

I. Dyer

C. L. Dym

A. Freedman

G. M. L. Gladwell

M. Heckl

D. J. Johns

A. W. Leissa

D. J. Mead

H. G. Morgan

R. A. Piesse

E. J. Richards

D. W. Robinson

J. D. Robson

A. Tondl

G. B. Warburton

VOLUME 108

1986

ACADEMIC PRESS

LONDON ORLANDO SAN DIEGO
NEW YORK AUSTIN BOSTON
SYDNEY TOKYO TORONTO

ISSN 0022-460X



CONTENTS OF VOLUME 108

NUMBER 1, 8 JULY 1986

NARITA, Y., Free vibration analysis of orthotropic elliptical plates resting on arbitrarily distributed point supports	1
TO, C. W. S., Distribution of the first-passage time of mast antenna structures to non-stationary random excitation	11
ABBAS, B. A. H., Dynamic stability of a rotating Timoshenko beam with a flexible root	25
TIWARY, R. and REETHOF, G., Hydrodynamic interaction of spherical aerosol particles in a high intensity acoustic field	33
DICKINSON, S. M. and DI BLASIO, A., On the use of orthogonal polynomials in the Rayleigh-Ritz method for the study of the flexural vibration and buckling of isotropic and orthotropic rectangular plates	51
GOTTLIEB, H. P. W., Harmonic frequency spectra of vibrating stepped strings	63
GÜRGÖZE, M., Parametric vibrations of a restrained beam with an end mass under displacement excitation	73
CAAP, P. and MONKEWITZ, P. A., An experimental and theoretical study of radial acoustic resonance in a cylindrical cavity	85
BAPAT, C. N., SANKAR, S. and POPPLEWELL, N., Repeated impacts on a sinusoidally vibrating table reappraised	99
SINHARAY, G. C. and BANERJEE, B., A modified approach to large amplitude free vibration of thin elastic plates	117
LAURA, P. A. A. and GUTIERREZ, R. H., Vibrations of an elastically restrained cantilever beam of varying cross section with tip mass of finite length	123
HOWELL, G. P., Truncated Taylor series solutions to a generalized Burgers' equation	133
QIAN, Z. W., Concentrated suspension theory of sound attenuation in marine sediments: Sound- and viscous-waves interactions	147
CHANG, I.-J. and CUMMINGS, A., Higher order mode and multimode acoustic transmission through the walls of flat-oval ducts	157
<i>Letters to the Editor</i>	
LAURA, P. A. A., Comments on "Influence of unsymmetric boundary conditions on vibrations of tapered plates"	165
KIM, C. S., Comment on "Natural frequencies of rectangular plates using characteristic orthogonal polynomials in Rayleigh-Ritz method"	166
BHAT, R. B., Author's reply	167
DICKINSON, S. M., Comment on "Free vibration of an oblique rectangular prismatic shell"	169

CONTENTS OF VOLUME 108

IRIE, T., YAMADA, G. and KOBAYASHI, Y., Authors' reply	171
SUBRAMANIAN, G. and BALASUBRAMANIAN, T. S., Adaptation of a high precision triangular element for stepped plate vibration	172
AWREJCEWICZ, J., On the occurrence of chaos in Duffing's oscillator	176
ERRATA	179

NUMBER 2, 22 JULY 1986

DIMAROGONAS, A. D., Dynamic instability of shafts during machining	181
PALEJ, R. and NIZIOL, J., On a direct method of analyzing impacting mechanical systems	191
BULLEN, R. B., HEDE, A. J. and KYRIACOS, E., Reaction to aircraft noise in residential areas around Australian airports	199
BULLEN, R. B. and HEDE, A. J., Comparison of the effectiveness of measures of aircraft noise exposure by using social survey data	227
BARUH, H. and SILVERBERG, L. M., Identification of external excitations in self-adjoint distributed systems using modal filters	247
HUMPHREY, V. F., The influence of the plane wave spectrum of a source on measurements of the transmission coefficient of a panel	261
PARNES, R., Asymptotic near field steady state response to a ring load bore pressure	273
RAO, K. N. and MUNJAL, M. L., Experimental evaluation of impedance of perforates with grazing flow	283
YAMADA, G., IRIE, T. and TAMIYA, T., Free vibration of a circular cylindrical double-shell system closed by end plates	297
SHAW, S. W., On the dynamic response of a system with dry friction	305
CRAGGS, A., A finite element model for acoustically lined small rooms	327
TOHYAMA, M., Equivalent sound absorption area in a rectangular reverberant room (Sabine's sound absorption factor)	339

Letters to the Editor

GOTTLIEB, H. P. W., Addendum to "Harmonic frequency spectra of vibrating stepped strings"	345
LAURA, P. A. A. and CORTINEZ, V. H., Optimization of eigenvalues in the case of vibrating beams with point masses	346
STEPHEN, N. G., Author's reply	347
CRAGGS, A., A procedure for balancing large turbo-generator sets via a finite element model	349
LAURA, P. A. A., Comments on "Natural frequencies of rectangular plates using characteristic orthogonal polynomials in Rayleigh-Ritz method"	353
BHAT, R. B., Author's reply	353

BHAT, R. B., Application of Rayleigh-Ritz method on the finite element model of a structure as a means of co-ordinate reduction	355
ILANKO, S. and DICKINSON, S. M., Linearization of the strain energy expressions for a vibrating slightly curved beam subjected to an axial load	357

NUMBER 3, 8 AUGUST 1986

WRIGHT, S. E., Sources and observers in motion, I: Time variant analysis and its implications for aerodynamic sound	361
WRIGHT, S. E. and LEE, D. J., Sources and observers in motion, II: Acoustic radiation from a small rigid body in arbitrary motion	379
WRIGHT, S. E. and LEE, D. J., Sources and observers in motion, III: Acoustic radiation from non-compact rigid bodies moving at high speed	389
WRIGHT, S. E. and CROSBY, W., Sources and observers in motion, IV: Acoustic measurements on aerofoils moving in a circle at high speed	405
BUSBY, H. R., NOPPORN, C. and SINGH, R., Experimental modal analysis of non-linear systems: a feasibility study	415
IWANKIEWICZ, R., Response of vibratory systems to general random pulses	429
MURTHY, P. G. K. and MURTHY, G. R. K., A case study on the influence of internal waves on sound propagation in the sea	447
EL-ZAHRY, R. M., Optimum design of preloaded bolted joint under harmonic excitation	455
PETERSSON, B., A thin-plate model for the moment mobility at the intersection of two perpendicular plates	471
SHABANA, A. A., Effect of using composites on the dynamic response of multi-body systems	487
BICKFORD, W. B. and MAGANTY, S. P., On the out-of-plane vibrations of thick rings	503
TANG, D. M. and DOWELL, E. H., Damping in beams and plates due to slipping at the support boundaries, Part 2: Numerical and experimental study	509
<i>Letters to the Editor</i>	
JACOBY, A. and ELISHAKOFF, I., Discrete-continuous elastic foundation may leave the flutter load of the Pflüger column unaffected	523
RICE, H. J., Combinational instability of the non-linear vibration absorber	526
BAPAT, C. N. and SANKAR, S., Periodic and chaotic motions of a mass-spring system under harmonic force	533
Index to Volume 108	537

Copyright © 1986, by Academic Press Inc. (London) Ltd.

ALL RIGHTS RESERVED

No part of this volume may be reproduced in any form, by photostat, microfilm, or any other means, without written permission from the publishers.

Printed in Great Britain